# THE RAW RATTAN EXPORT BANS AND THE IMPACT ON INDUSTRIAL DEVELOPMENT**

*Mangara Tambunan*

*Berbeda dengan semangat deregulasi, pengembangan industri rotan dimulai dengan melarang* (export ban) *ekspor bahan baku rotan mentah dan rotan olahan melalui beberapa surat keputusan pemerintah. Tujuan dari pelarangan ekspor tersebut adalah untuk menjadikan Indonesia menjadi negara pengekspor hasil olahan rotan seperti* furniture *dan beragam produk rotan lain. Jumlah industri rotan berskala besar dan kecil bertambah dan terpusat di Jawa. Dampak pembangunan industri rotan telah meningkatkan produksi ekspor dan kesempatan kerja secara agregat, disamping pengusaha menikmati keuntungan dari industri rotan. Dampak implementasi dari pelarangan ini, walaupun telah berhasil membuat Jawa menjadi pusat industri rotan baru di tingkat perdagangan dunia, tetapi luar Jawa seperti Sulawesi, Kalimantan dan Sumatera kehilangan kegiatan perdagangan rotan. Hal ini dapat mendorong terjadinya penyeludupan sebagai subsitusi terhadap kegiatan ekonomi yang telah hilang di daerah penghasil bahan baku rotan. Menurut hasil analisis distribusi rente, penikmat utama larangan ekspor adalah pengusaha pengolahan rotan, dan tenaga kerja industri. Sedangkan pihak yang kehilangan adalah petani pengumpul rotan dan pemerintah, karena rente yang diterima menurun. Dengan demikian, kebijakan pelarangan ekspor ini mengandung anti trade terhadap daerah yang tadinya sudah biasa melakukan perdagangan ke luar negeri. Kondisi itu terjadi, karena daerah sentra produksi bahan baku rotan yang semula direncanakan menjadi daerah pusat industri, ternyata tidak terealisasikan. Sejalan dengan keputusan GATT, AFTA dan APEC, sebaiknya pemerintah mengurangi tarif ekspor bahan baku rotan, serta mencabut aturan larangan dan tarif ekspor tinggi terhadap rotan olah setengah jadi. Tujuannya agar daerah dapat tetap menikmati hasil sumber daya alam pada tingkat penguasaan teknologi yang mereka kuasai. Dari hasil penelitian ini ditunjukkan kemitraan melalui subkontrak dapat menjembatani transfer teknologi dan kepastian pemasaran, serta menciptakan lapangan kerja yang lebih besar.*

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## Background and Objective

The subject that will be analyzed in this paper is the case of assessment welfare impact of export restriction of rattan and semi finished rattan on the development of the Indonesian non-oil industrial export capacity[1].

The Indonesian government (GOI) has issued at least 7 Presidential/ Ministerial decrees related to export bans of raw and semi-finished rattan since 1979. Based on the "success" of the trade policy restriction on the prohibition of lumber export in the late 1970's to achieve export increases, starting in 1979 the GOI gradually prohibited the export of unprocessed rattan cane which initially was a primary export commodity from Indonesia. This was continued until in 1989 the GOI completely banned the export of all semi-finished rattan. The objectives of these export bans (restrictions) were essentially designed to achieve the following four major objectives, namely: (a) to increase the value added share of the Indonesian economy which was initially enjoyed by major importers of rattan cane such as Taiwan, South Korea, Hongkong, Japan, North America, Australia and some European countries, (b) to generate income and employment, (c) to increase the profit for Indonesian firms and (d) in the "post oil boom", to increase the export share and strengthen the non-oil based industrial export especially for processed primary commodities through agroindustrial development[2].

In recent years, in connection with the industrial development in the late 1970's, policy makers in Indonesia have, based on distributional arguments (not growth), sought to promote the growth of small producers particularly in rural areas. One such policy option is to encourage large states as well as privately owned companies to take up small-scale producers in the linkage program. One linkage program is widely known as *Sistem Bapak Angkat* (SAB) (Foster-Parent Arrangement).

The major objective of this paper is threefold. *First*, to assess the economic impact of export bans on the economy. *Second*, to determine economic rent and its distribution in terms of who and what gets benefits (losses). *Third*, at the micro level, this paper is aimed at examining the role of subcontract arrangements on the employment generation with Tegalwangi Cirebon, West Java as a case study. Tegalwangi is taken as a case-study because it has a macro policy implication reflecting the much broader scope of industrialization derived from export response. *Fourth*, this paper also analyzes the sustainability of the subcontract system as a possible supplemental policy to develop linkage programs such as the Foster Parent arrangement that is now implemented by the GOI.

## An Assessment of Economic Impact

This chapter will be divided into four sections: (a) to show the effect of export bans on export diversification of rattan output, (b) its effect on rattan industrial

[1] This research is based on several reports and staff working papers as a result of research cooperation between the Center for Development Studies (CDS-IPB) with the Institute of Social Studies[ISS-The Hague, Netherland and the Bandung Institute of Technology, Bandung (PPLH-ITB)] from 1987 to 1991 and also recent rattan study at the Bogor Institute of Agriculture.

[2] In our case, the Nucleus Estate System (NES) is a good case to show how large-scale firms would assist small- scale firms (farmers) to increase production and income for participants.

growth and direct employment by large and small firms, (c) finally to assess who gets benefits and losses from the export ban trade policy by using rent distribution.

## *1. Recent Changes in Rattan Industries and Exports*

The effect of export bans on output of raw and semi finished rattan can be observed in recent changes in the export composition of rattan products. It is worth mentioning here that raw and semi-finished rattan account for about 90 percent of Indonesia's non-timber forest products. Table 1 presents recent diversification changes in the export of rattan products.

Table 1 shows the development of rattan export in the last 14 years. The restrictive export ban on rattan products indeed has diversified the composition of rattan export. The export of raw rattan recorded 90.8 and 90.5 percent of the total for 1977 and 1988. But in 1979, when the policy of export ban implemented, the percentage of raw rattan export decreased to 84 percent . This clearly shows, the export of semi-finished and finished rattan products increased. The semi-finished rattan export increased from 8.7 percent in 1977 to 83.4 percent in 1986 and has sharply declined since then. Table 1 also shows that finished rattan products (mainly furniture) increased in three segments from 0.5 percent in 1977 to 4.5 percent in 1986 and sharply increased to 97.7 percent in 1990. To illustrate further the effect of export bans, Table 2 and Figure 1 present the export values of four selected years.

In conclusion, the export bans have induced the Indonesian economy to become one of the world largest rattan industries.

## *2. The Growth of Rattan Industries and Employment Creation*

Shortly after the announcement of the complete export-ban of semi- finished rattan products (1989), the GOI also prepared credit packages with low interest (9 percent which was below the nominal market-interest of 12 percent) primarily offered to private sectors. Wasting no time, the large and medium firms, (mostly non-rattan furniture manufacturers and even many newly established firms) were induced to make a market-entry. Under these circumstances, the export bans were also designed to increase foreign and domestic investment in rattan processing industries. The objective was clear, rather than exporting primary commodities (raw rattan) GOI aimed at developing strength in the rattan processing industries in order to capture the export-market. As a result of this subsidized low interest rate, during the years 1987-1990 there was a growth in large and medium rattan industrial processing industries primarily in Java, Bali, and Sumatera (see Table 3). Thus, export bans provide short term guaranteed demand growth for rattan processing firms to enter the export-market. Along with the growth of large and medium sized rattan firms, small and cottage firms are also recorded as growing industries either in connection with or independent from these large firms.

In rattan industries, according to one estimation prior to the ban of raw rattan cane, 150,000 full-time workers were employed, cutting and processing in rural areas. As the figure in Table 3 indicates, workers with rattan industries increased from 150,000 in 1988 to 187,000 in 1991 and then significantly decreased to approximately 68,000 in 1995. There are at

Table 1. **Changing in Export Performance of Rattan Industrial Product in Indonesia (1980 1993)**

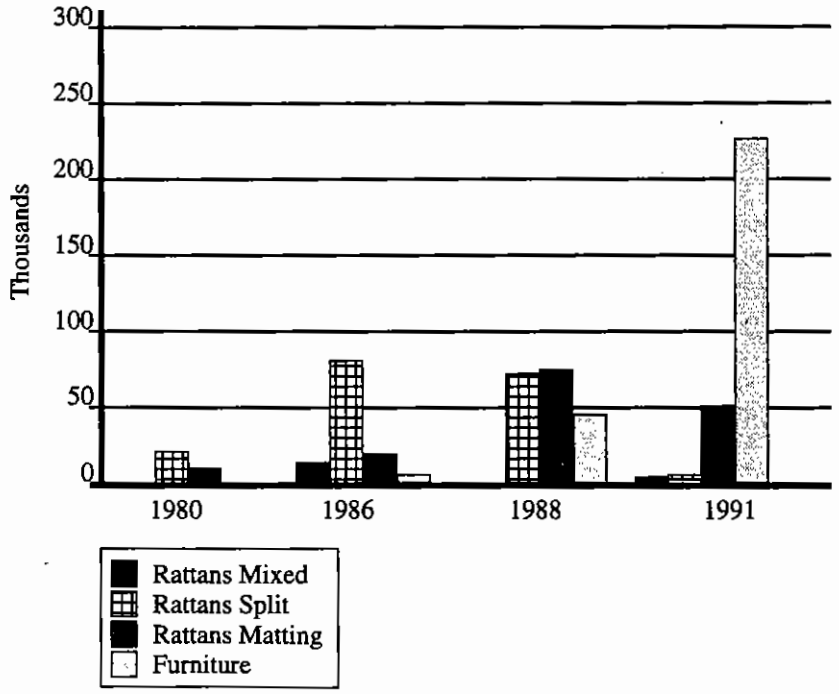
| Year | Volume and Value of Export | | | | | | | | | | | | Total | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Raw Rattan | | | | Semi-Finished Rattan | | | | Finished Rattan | | | | | | | |
| | Volume (ton) | | Value (US$ 000) | | Volume (ton) | | Value (US$ 000) | | Volume (ton) | | Value (US$ 000) | | Volume (ton) | | Value (US$ 000) | |
| 1977 | 62,200 | (90.1%) | 12,100 | (69.7%) | 6,500 | (9.4%) | 3,400 | (19.6%) | 350 | (0.5%) | 1,850 | (10.7%) | 69.050 | (100%) | 17,350 | (100%) |
| 1978 | 63,300 | (90.5%) | 22,400 | (78.4%) | 6,250 | (8.9%) | 4,000 | (14.0%) | 419 | (0.6%) | 2,184 | (7.6%) | 69,969 | (100%) | 28,584 | (100%) |
| 1979 | 87,300 | (84,0%) | 58,000 | (73.7%) | 15,560 | (15.0%) | 14,224 | (18.1%) | 1,025 | (1.0%) | 6,493 | (8.2%) | 103,885 | (100%) | 78,717 | (100%) |
| 1980 | 64,000 | (77,5%) | 57,400 | (67.2%) | 15,832 | (19.2%) | 17,774 | (20.8%) | 2,792 | (3.3%) | 10,200 | (11.9%) | 82,624 | (100%) | 85,374 | (100%) |
| 1981 | 49,091 | (71,7%) | 49,519 | (67.2%) | 18,388 | 26.9%) | 19.137 | (26.0%) | 964 | (1.4%) | 55,017 | (6.8%) | 68,443 | (100%) | 73,673 | (100%) |
| 1982 | 51,301 | (57,5%) | 50,287 | (59.9%) | 24,962 | (32.1%) | 25.497 | (30.4%) | 1,547 | (2.0%) | 8,181 | (9.7%) | 77,810 | (100%) | 83,965 | (100%) |
| 1983 | 46,934 | (43,3%) | 42,907 | (49.8%) | 34,285 | (41.7%) | 35,475 | (41.2%) | 985 | (1.2%) | 7,760 | (9.0%) | 82,204 | (100%) | 86,142 | (100%) |
| 1984 | 52,579 | (11,1%) | 44,411 | (47.0%) | 37,248 | (40.8%) | 41,882 | (44.3%) | 1,547 | (1.7%) | 8,260 | (8.7%) | 91,374 | (100%) | 94,493 | (100%) |
| 1985 | 68,491 | (0,3%) | 62,709 | (64.0%) | 87,899 | (55.6%) | 23,957 | (24.5%) | 1,800 | (1.1%) | 11,241 | (11.5%) | 158,190 | (100%) | 97,907 | (100%) |
| 1986 | 13,217 | (0,0%) | 12,813 | (11.6%) | 104,472 | (87.3%) | 76,262 | (69.1%) | 1,935 | (1.6%) | 21,253 | (19.3%) | 119,624 | (100%) | 110,328 | (100%) |
| 1987 | 434 | (0,0%) | 394 | (0.2%) | 130,446 | (95.7%) | 151,397 | (70.3%) | 5,401 | (4.0%) | 63,472 | (29.5%) | 136,281 | (100%) | 215,263 | (100%) |
| 1988 | 0 | (0,0%) | 0 | (0,0%) | 57,160 | (78.8%) | 74,472 | (44.7%) | 15,385 | (21.2%) | 92,089 | (55.3%) | 72,545 | (100%) | 166,561 | (100%) |
| 1989 | 0 | (0,0%) | 0 | (0,0%) | 704 | (1.9%) | 1,063 | (0.7%) | 37,150 | (98.1%) | 157,318 | (99.3%) | 37,854 | (100%) | 158,381 | (100%) |
| 1990 | 0 | (0,0%) | 0 | (0,0%) | 1,747 | (2.8%) | 3,042 | (1.4%) | 60,078 | (97.2%) | 220,014 | (98.6%) | 61,825 | (100%) | 223,056 | (100%) |
| 1991 | 0 | (0,0%) | 0 | (0,0%) | 196 | (0.3%) | 447 | (0.2%) | 69,572 | (99.7%) | 226,092 | (99.8%) | 69,768 | (100%) | 226,539 | (100%) |
| 1992 | 0 | (0,0%) | 0 | (0,0%) | 53 | (0.1%) | 121 | (0.04%) | 88,361 | (99.9%) | 295,584 | (99.96%) | 88,414 | (100%) | 295,705 | (100%) |
| 1993 | 0 | (0,0%) | 0 | (0,0%) | 1 | (0.001%) | 122 | (0.03%) | 106,089 | 99.999%) | 354,888 | (99.97%) | 106,090 | (100%) | 355,010 | (100%) |
| Average per year : | | | | | | | | | | | | | | | | |
| 1977 - 1978 | 90.3% | | 74.1% | | 9.2% | | 16.8% | | 0.5% | | 9.1% | | 100% | | 100% | |
| 1979 - 1988 | 46.8% | | 44.1% | | 49.3% | | 38.9% | | 3.9% | | 17.0% | | 100% | | 100% | |
| 1989 - 1993 | 0.0% | | 0.0% | | 1.0% | | 0.5% | | 99.0% | | 99.5% | | 100% | | 100% | |

**Sources**: Calculated from Central Bureau Statistics Departement of Industries

Tabel 2. **Export of Indonesian Rattan Related Products in Selected Years**

| Rattan Products | 1980 | 1986 | 1988 | 1991 |
|---|---|---|---|---|
| | Total Value US$ | Total Value US$ | Total Value US$ | Total Value US$ |
| Rattan Mixed | - | 12,812.97 | - | 82.76 |
| Rattan Split | 17,774.06 | 76,261.97 | 74,471.97 | 363.93 |
| Rattans Matting | 7,608.30 | 15,640.00 | 74,856.60 | 51,742.41 |
| Furniture | - | 4,363.82 | 45,278.00 | 226,091.65 |

Figure 2. **Export of Indonesian Rattan Products in Selected Years (US$)**




least three possible reasons: (a) declining export market demand due to the recent world recession and (b) because the price of rattan furniture tends to be decreasing in the world market and artificial rattan as potential substitute to natural rattan may have been developed in the country of the former importer of raw rattan.

One interesting aspect of these recent changes as suggested by Figures (in Table 3) is that Java and Bali became leading rattan industrial regions while the number

Table 3. **The Growth of Rattan Industries and Employment Generation According to Provinces (Regional) from 1988 to 1993**

| Name of Provinces | Number of Industries | | | Number of Employment | | |
|---|---|---|---|---|---|---|
| | 1988 | 1991 | 1993 | 1988 | 1991 | 1993 |
| Daerah Istemewa | 3 | 3 | 2 | 577 | 577 | 102 |
| Aceh | 12 | 14 | 20 | 4.767 | 5.874 | 2.879 |
| North Sumatera | 9 | 10 | 5 | 1.456 | 2.822 | 649 |
| West Sumatera | 7 | 8 | 2 | 2.685 | 1.561 | 120 |
| Riau | 2 | 2 | 2 | 148 | 148 | 161 |
| Jambi | 1 | 1 | 1 | 229 | 229 | 157 |
| Bengkulu | 2 | 2 | 1 | 597 | 1.137 | 465 |
| South Sumatera | 3 | 4 | 4 | 523 | 523 | 245 |
| Lampung | | | | | | |
| All Sumatera | 39 | 44 | 37 | 10,982 | 12.871 | 4.778 |
| DKI Jakarta | 22 | 27 | 21 | 5.429 | 7.243 | 2.024 |
| West Java | 109 | 156 | 152 | 50.248 | 74.394 | 27.035 |
| Center of Java | 6 | 7 | 38 | 6.081 | 7.003 | 3.839 |
| Daerah Istimewa | 0 | 1 | 6 | 0 | 84 | 564 |
| Yogyakarta | 65 | 89 | 69 | 42.808 | 51.165 | 18.093 |
| East Java | 1 | 1 | 4 | 20 | 20 | 444 |
| Bali | | | | | | |
| All Java | 203 | 281 | 290 | 104.568 | 139.939 | 51.999 |
| West Kalimantan | 6 | 6 | 1 | 1.857 | 1.857 | 208 |
| Center Kalimantan | 16 | 17 | 6 | 4.911 | 5.477 | 1.151 |
| South Kalimantan | 44 | 46 | 32 | 12.070 | 11.993 | 5.116 |
| East Kalimantan | 7 | 8 | TT | 1.636 | 1.715 | TT |
| All Kalimantan | 73 | 77 | 39 | 20.474 | 21.042 | 6.475 |
| Noth Sulawesi | 12 | 16 | TT | 1.794 | 2.286 | TT |
| Center Sulawesi | 22 | 23 | 30 | 5.688 | 5.888 | 2.172 |
| South Sulawesi | 23 | 26 | 10 | 5.871 | 6.023 | 1.715 |
| South East Sulawesi | 9 | 9 | 11 | 1.115 | 1.115 | 638 |
| All Sulawesi | 66 | 74 | 51 | 14.468 | 15.312 | 4.525 |
| INDONESIA | 381 | 476 | 417 | 150.510 | 189.164 | 67.777 |

of rattan industries in Kalimantan, Sumatera and Sulawesi declined significantly. There are three reasons why Java and Bali have become large rattan manufacturing regions. *One*, the GOI industrial policy, was designed to make Jakarta and Surabaya, the industrial centers for rattan thereby effectively reinforcing how Java has already reached a relatively advanced industrial stage as compared to the rest of Indonesia. *Two*, historically the Javanese and Balinese societies have a relatively strong tradition in handicraft industries. The export bans have induced investors to make an investment in Java primarily because Java has a better infrastructure and low wage labor. *Three*, the potential demand due to population (demand) is concentrated in Java and a steady increase of income per capita in the last 20-years is also one key-factor for attracting both foreign and domestic investments to Java. As a result, Java has emerged as a major rattan producer because Java has relatively good infrastructure (roads and ports).

### 3. *A Rough Assessment of The Economic Rent Distribution*

The economic impact of an export ban on any natural resource stocks such as lumber and rattan cane for processed industrial output, can be assessed in terms of "economic rent distribution among the economic agents involved." Rent is defined by deducting the sales value of rattan products from the cost of producing (harvesting) rattan where the cost includes cutting costs, return to capital in the process and profit of the firm on various levels of unfolded rattan processing, from collecting up to the final products. There are at least four major economic agents that might be involved in the rattan industries: (a) processing and exporting firms are interested in maximizing their profit, (b) the government is interested in maximizing the revenues either in the form of tax/royalty or foreign exchanges, (c) small producers (rattan collectors) are interested in maximizing profit or welfare, and (d) banks as profit sellers.

Inspired by a previous research A.Faryanti, 1995[3] conducted a research to attempt to measure the economic rent and its distribution among economic agents involved in rattan industries for her master's paper. The so-called ideal calculation of economic rent should be started from first economic agents, in this case the firm at the farm level (rattan cane collector) and followed by calculating economic rent enjoyed by the big trader (rattan buyer) and then rattan manufacture firms. This first method could be briefly presented as follows:

*Method I: Farmers → Buyers → Factory → Final Product*

The method of economic rent calculation is as follows (F.L.C Reed and Associates Ltd, 1992)

$$I = GR - TC \quad \ldots\ldots (1)$$
$$i + K = GR - TC \quad \ldots\ldots (2)$$
$$i = GR - TC - K \quad \ldots\ldots (3)$$

where: I = Gross revenue
GR = The value of sales of firm,
TC = Total cost including marketing cost
i = economic rent
k = normal profit and possible 20 percent risk is included

Because of data limitation she used a different method. The calculating eco-

[3] A detailed analysis on absolute amount of rent distribution.

nomic rent based on conversion method is starting by first calculating rent through value of final product at manufacture firms then traced backward to all possible economic agents involved. This second method could be simplified as follows: The two methods could be constructed in a simple form as follows :

*Method II : Final Product → Factory → Buyers → Farmers*

Despite the loss of the elegancies of calculating economic rent in each economic agent, her research result is used to show the welfare effect of export bans on rent distribution.

Some interpretations of the result of this rent distribution are as follows:

(a) At Producer and exporter Firms. As shown in Table 4, for return to capital, producer firms have increased the share of profit because they control the marketing and information network in the domestic and export-market. The economic rent is also enjoyed by large and medium scale industries. Small and household-producers involved in the rattan processing industries are certainly also enjoying economic rent but predictably lower than the firms of large and medium size. However, the portion of economic rent that goes to laborers is lower but also declined after the export bans. This is largely because in an economy with abundant labor-supply, the export ban tends to push a form of competition toward minimizing the reward (rent) for labor.

(b) Interestingly, the result of the analysis in Table 4 shows that for unclear reasons, the share of rent enjoyed by Banks is not only small but also declined after the export ban. Whereas the small rent enjoyed by the government also declined. Our conjecture is that firms may not have paid their taxes. The low price of rattan cane at farm-gate somewhat reduces regional (provincial) and in turn domestic rent, while a difference in world prices induces smuggling activities. Thus, the losers are the provincial governments where rattan is cultivated. We may conclude that the export bans have a positive impact on government revenues, but with the weak existing government force to control smugglers and tax structures the government is not able to capture all potential revenues.

(c) At Farm Level (Rattan Collector). As shown at Table 4, the export ban tends to

Table 4. **Rent Distribution Among Economic Agents Involved; After Export Bans. Case: Tegalwangi, Cirebon, 1994.**

| Economics Agent | Before EB % | After EB % |
|---|---|---|
| Government | 4.2 | 3.2 |
| Exporters Manufacture Firms | 37.9 | 38.1 |
| Banks | 8.1 | 4.9 |
| Manufacture Laborers | 15.1 | 11.1 |
| Farmers (Rattan Collectors) | 21.5 | 17.0 |
| Others | 13.2 | 25.2 |
| Total | 100.0 | 100.0 |

**Source:** Anna Fariyanti, 1985.

depress raw rattan prices mainly because in the early implementation of the export ban, domestic rattan industries were not capable of absorbing all the raw rattan as before the export ban. As an illustration, the price of rattan cane before export bans was recorded at Rp 70,000 per kuintal but now, as shown by Soeparmoko, the farm-gate price level is noted at only Rp 30,000 per kuintal (*Kompas*, June 24, 1992). The share of farmers declined after export bans. This declining price has a large implication not only on the economic rent but also on the environment. First, in order to maintain the same level of income, rattan collectors are likely to cut more rattan. In turn this could effect natural resources for farmers and the environment. This economic condition predictably further depresses the price of raw rattan.

(d) In learning about these declining income generating activities at the farm level, in early 1991 all Provincial Governors of Kalimantan and perhaps Sulawesi and Sumatera sent letters of complaint to suggest the Minister of Finance and Trade to lift the export bans at least for semi-finished rattan. Our discussion above shows, that internally there are two economic pressures on the central government to lift the export bans: (1) the regional government of Kalimantan, Sulawesi, and other islands have a strong interest to increase revenues derived from rattan industries, and (2) to restoring income lost as a result of the export ban. Indonesia should comply with general agreements on Trade and Tariff (GATT) and APEC and therefore Indonesia should review these export bans in the near future. It is important to mention that the Ministers of Finance and Trade have replaced the export ban on rattan and lumber[4] and (have replaced) the export bans (prohibitive non tariff barriers) with a very high export tax rate per unit output.

The problem, however, of replacing export bans with very high export tariff barriers does not change anything but raises a further question. Why did GOI raise the raw rattan export-tax so high that it has become almost impossible to export raw rattan and lumber? It would be very instructive and in order to comply with GATT rules to suggest the necessity of conducting a comprehensive research to measure the net economic effect of possibly replacing high export tariffs with low tariffs.

## Subcontracting Arrangements and Employment Creation

### *1. Tegalwangi as a Case Study*

Tegalwangi is a semi-urban village located about 11 km west of Cirebon on the north coast of West Java and connected with a high speed road to Jakarta. According to several reports, the handicraft activities in Tegalwangi have been developed since 1930. By the 1950's most people in Tegalwangi made and sold chairs locally, operating as individuals or in family based groups. Although categorized as semi urban (rural), the Tegalwangi economy is characterized as a labor surplus economy. Sub-district (*kabupaten*) Cirebon, back in Dutch history, was well known to be populated by a large number of "koelis" or a large number of landless and farm laborers. Unlike other villages Tegalwangi had for a long time been known as a place of small scale and cottage indus-

[4] *Keputusan Menteri Keuangan* (Minister of Finance new Trade Policy on log and rattan) can be seen in SK MENKEU, No. 534/KMK013/1992.

tries of bamboo, wood and small part rattan.

Until the mid 1970's Tegalwangi still remained a village with small and household handicraft industries. Various government institutions and universities reorganized the economic potential for improving Tegalwangi as small and handicraft industries. Beginning in 1973, the government made an institutional intervention by conducting various short trainings on handicraft, management and marketing etc. (B.White, 1990). Systematically explaining some of this institutional intervention: (a) in 1973 the Department of Industry along with non-government organizations (LP3ES), Jakarta based NGO's and the Bandung Institute of Technology conducted training to providing instruction to a small number of entrepreneurs in technical handicraft industries, (b) in 1979, the Department of Labor organized a cooperative where 20 members received cooperation from Bank Indonesia, (c) the Department of Industry had an intensive and continous training and organized a so called "cluster industry" (sentra industry) for small scale industries and later (d) local banks took an active role for providing credit scheme, through credit programs especially export credit for large scale industries.

As a result of the implementation of this institutional intervention, and the export bans that began in 1986 on raw and semi-finished rattan products, Tegalwangi has become a logical place for the investment of large/medium scale rattan industries. As a result of implementing this intervention, there has been a natural growth of large and small-scale rattan industries and subcontract arrangements are widely practiced among them. There are at least three reasons: (a) it has a relatively good infrastructure such as roads, transportation, electricity, telephone, (b) it is not located too far from Cirebon city, (c) it is connected with a high-speed road to Jakarta where one major harbor for export is located, and (d) it is endowed with the availability of relatively well experienced labor with low wages ranging from Rp 1,500 to Rp 7,500 per workday. The average wage in the agriculture sector in Cirebon for 1991 was about Rp 2,500 per day.

## 2. *The Subcontract Arrangement And Employment Creation*

A firm consisting of organization and market (Coase, 1937) has the objective to maximize profit, through minimized transaction costs. The way a firm achieves this objective, may organize their owned or controlled resources to produce output with the minimal transaction cost principle. Since price given is assumed, the most manipulate able instrument to achieve efficiency within the management of a firm is to produce the right amount of output while reducing cost strategy. For large firms (relative to small firms) there is always a more complex decision to be faced on resource allocation to secure raw materials, selling output and recruiting labor and making necessary contracts and subcontracts.

In the world of rapid industrial changes where the market is imperfect or a failure[5] (Coase, 1937 and extensively developed by Williamson, 1975) based on the theory of transaction cost, arguing the

[5]The imperfect market is defined in a simple way. Where a government largely intervenes in the economy, that intervention must create an imperfect market in price of combination of output, labor, capital and input market.

subcontracting arrangement is very difficult to form in the production system. He shows two basic reasons: (a) complexity and bounded rationality — such as difficulty to predict changing economic conditions, which are difficult for anyone to forecast and therefore the condition is not conducive to develop a rigid arrangement and (b) among two parties who make such an arrangement the tendency to lie or cheat (opportunity) may easily emerge. He further argues, it is difficult for large firms with experience to enforce contracts. The greater uncertainty, combined with the time consuming and expensive enforcement of a contract may cause the firm to prefer a vertically integrated organization to subcontracting.

Stiglitz in his research article (1991) observed that the debate about the form of production organization is part of the effort in the sense that the parent firms would be able to secure the needed input for producing a certain growth of output. Stiglitz further argued that a large firm with or without market integration should not make much difference. He arrived at the conclusion that there is no convincing argument for whatever reason why a firm should make an integration in production and distribution. Despite Stiglitz's opinion, however, if we look at the case of the Tegalwangi rattan industries after the export bans, the question remains unanswered as to why large firms have a strong desire to adopt subcontracting arrangements with small firms in the production organization. It is plausible to argue that despite the market failure, subcontracting arrangements could still take place.

In the case of the Tegalwangi rattan industry, there are three forms of subcontract arrangements that are commonly adopted: (a) producing semi-finished goods, (b) producing furniture components, and (c) the stage of work. *The First case*, a large exporter puts out to a small firm the entire production of various furniture which is returned to the parent firm for finishing. *Second*, a large exporter, a smaller enterprise selling to national markets or even a small subcontract firm, puts out the manufacturing of components such as the drawers of a cupboard and the goods are assembled by parent firms. *Third*, in the stage subcontracting, the workput out by the large exporter are: weaving and tying (Ben White, 1990).

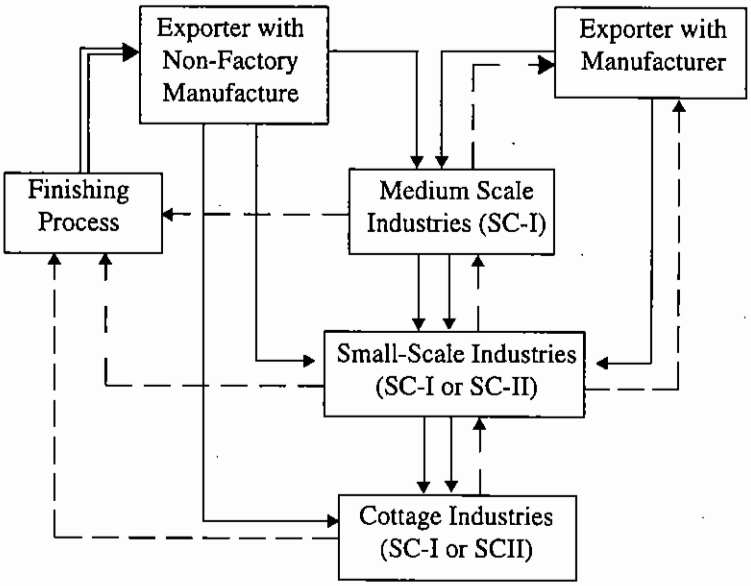
Based on a review of some research results and reports under the author's supervision, there are at least three reasons why subcontracting arrangements are adopted in the industrial rattan community of Tegalwangi (Dian, 1989; Iskandar et.al, 1991): *First*, after the export bans, the fluctuation of rattan products in the world-market has effectively influenced large-scale firms to make contract arrangements. When demand sharply increased but the existing large firms' industrial capacity was limited to meet the demand, the large firm tended to use contract arrangements for fulfilling its export-market share or commitment. This export demand induced large firms to complete a certain amount of output within a time limit which effectively pushed large firms to subcontract arrangements. If not, then buyers would turn to different producers. Thus, the rattan manufacture capacity associated with growth demand for rattan products is a lay factor for subcontracting arrangements. *Second*, a subcontracting arrangement from the large firms' point of view was regarded as adopting the principle of reducing the cost per unit output, for the large firm uses low labor cost for producing ordered rattan products by small-scale firms. *Third*, a subcontracting arrangement may provide

"conveniences" to large scale exporters, that is less burden in finance and labor recruiting within the management of firms. This is in line with Watanabe (1983). Thus, the growth of output market and the reduced cost strategy can be used as a supplemental reason why large firms adopted subcontracting arrangements.

A survey conducted in 1990 in the Tegalwangi rattan industrial complex showed that the progress of subcontracting arrangements had extensively developed and even in many case reached three layers (as shown in Figure 2).

To begin with, Figure 2 shows two types of large firms (industries): owned or not-owned rattan manufactures. Both types of large firms are heavily involved in export activities. These two types of large firms mostly have a marketing network which usually receives domestic and international orders. These large firms will pass those orders on to their regular subcontractors SC-I (they may be medium or small- scale firms) for certain orders. This SC-I will subcontract again to SC-II (may be small or cottage industries) and if all of the firms view it still profitable, these SC-II firms will set a further subcontracting arrangement to SC-III (mostly cottage industries). Thus, the medium or small industries could be in the position of either first or second layers (SC-I or SC-II) while cottage industries are mostly positioned as SC- III in the whole subcontracting arrangement. One interesting aspect to analyze is that related to the interest of small firms in the process of subcontracting ar-

Figure 2. **Subcontract Arrangement in Rattan Industries of Tegalwangi, Cirebon, 1991.**




Explanation:
Final Product
Flow of Order
Flow of Semi-Finished goods
SC = Subcontract arrangement

rangements. More specifically it is associated with the question of how much profit is gained or received by each subcontractor. Certainly, profit-gain could be used to explain: (a) the financial magnitude or economic incentive systems working within the subcontract arrangement, (b) the economic welfare effect brought by the subcontract arrangement for the surrounding society, and (c) the sustainability of the subcontract arrangement.

There is no research that has been done to examine the profitability of all sizes of firms and the profit margin of a subcontracting arrangement received by the firms involved. This profit level can be used to explain not only the distribution of profit or "rent" among economic agents for taking subcontract arrangement as their production organization. Fortunately, Hanafiah D. (1989) made an attempt to roughly and empirically calculate the "profit margin" from large firm to SC-I, SC-II up to SC-III for producing a peace of rattan to be exported (Table 5).

If we carefully inspect all figures in Table 4, with the assumption that unfolded subcontract arrangements from top-layer exporters to SC-III take place, it is clearly shown to the profit share per unit of rattan shelf received by exporters in the final selling price Rp 23,125 (100 percent) with a net profit of Rp 4,625 (20 percent). SC-I earned around Rp 2,400 (10.38 percent), SC-II received a profit of Rp 375 (1.62 percent) and laborers received only Rp 375 in the form of salary. This result is so far predictable that lower layers in subcontract arrangements receive lower profits. To me it seems that the problem is, why do these small and cottage industries voluntarily accept such low profits per unit of output?

This result has been widely interpreted by some researchers as caused by the presence of an "exploitative relationship" or monopsonist position between large firms and small and cottage industries. Perhaps, as a digression, it may have been agreed upon specific terms in the subcontract arrangement under the influence of a real competitive market, but actually there are no claims saying the large firms exploit the small. Our research indicates that both parties involved voluntarily concluded the agreement or set the subcontracting arrangement. However, this rather defensive answer does not mean that we have already correctly solved this particular problem.

As shown by Iskandar et.al (1991), among subcontractor firms there is often the tendency to receive a production order from large firms an amount which is in excess of their own rattan manufacturing capacity. To make matters more complicated, as mentioned earlier, a small firm can at one time have the position of a firm as SC-I but simultaneously receive an order as SC-II. Therefore, if a profit calculation (as Dian did in Table 1) merely shows the profit-margin of a piece of rattan shelf in the position of SC-II or SC-III, the result does not reflect the overall picture of profit as derived from the subcontracting arrangement. The question that needs examining remains this: how do these three layers take place in the subcontracting arrangement? One possible explanation must lie in the labor-market condition. The interpretation that could be brought forward is the labor-market; employment opportunities in villages where SC-II and SC-III are located might face a serious problem of unemployment. The household might have accepted the subcontracting arrangement to increase poor family earnings reflecting a labor-surplus situation. In this way, the existing three-layer subcontracting system in the production

process encourages the movement of labor-intensive activities (technology) to regions with a surplus of labor in adjacent villages such as in Bodesari, Tegalsari and Bodelor and all in immediate vicinities. Thus, although profit and wages are low, this subcontracting arrangement may bring social benefits, at least employment opportunities, in labor-surplus villages but not without social consequences.

The development of the subcontract systems, may have largely been influenced by the nature of quantity output demand, quality and timing provision for market output, complexities of labor recruitment, and financial and overload factories. Since the small-scale industries do not have much direct access to wider export-markets, the small firms accepted the subcontract arrangements because economically and financially it is a viable choice for small firms to secure their access to domestic and foreign markets. Thus, from the perspective of small-scale industries, although subcontract arrangements provide small profit margin nevertheless they provide access to a stable output-market. In these circumstances large-scale firm partners play the role of a market provider including capital and technology for small-scale producers. In order to maintain a certain quality of the products purchased by large rattan firms from small firms, the large firm, would likely provide technical

Table 5. **Distribution of Profit Margin Derived from Peace Export Rattan Shelf, 1989**

| Items | Price per rattan shelf (Rp.) | Percentage of Distribution (%) |
|---|---|---|
| *Cost Component SC-II:* | | |
| ● Cost of raw materials | 7,125 | 30.81 |
| ● Salary for typing task worker | 400 | 1.73 |
| ● Salary for polishing raw rattan | 600 | 2.60 |
| ● Salary forming rattan frame | 1,500 | 6.49 |
| ● Profit Margin | 375 | 1.62 |
| Final Selling Price SC-II | 10,000 | 43.25 |
| *Cost Component of SC-I:* | | |
| ● Transportation cost | 100 | 0.43 |
| ● Profit Margin | 2,400 | 10.38 |
| Final Selling Price SC-I | 12,500 | 54.05 |
| *Cost Component of Exporter:* | | |
| ● Cost Container transportation | 1,000 | 4.33 |
| ● Cost of finishing | 4,000 | 17.30 |
| ● Cost of packing | 750 | 3.24 |
| ● Cost of loading | 250 | 1.08 |
| ● Profit Margin | 4,625 | 20.00 |
| Export Price | 23,125 | 100.00 |

**Source**: Dian Hanafiah (1989)

assistance for design and other technical matters to small firms. Therefore, this subcontracting arrangement could directly be used as a channel for the transfer of technology to increase the small firms' capability of participating in the production/distribution system. At the same time technological transfer would reduce market-uncertainty by improving quality and/or decreasing cost of production output.

The implication is that in the perspective of rural industrialization, the subcontracting arrangement could play an important role in diversifying the rural economy and could target certain villages or groups of people for creating employment and a productive economy, provided that those chosen villages are well prepared for skill-based industrialization.

### 3. *Subcontract Arrangement And Employment Generation*

The large scale rattan firms recently rose to 25 units and brought about a domestic and foreign demand market which in turn influenced the local economy. Presumably, all of these large-scale rattan firms have a single objective, that is to maximize the market share in the fresh export-market. To achieve this objective, large firms are using subcontracting arrangements as part of a risk reducing strategy by placing small producers in a rather hierarchical organization relationship.

Under these circumstances, through subcontracting arrangements, large-scale firms bring the firms' direct interest to small-scale firms, i.e. producing output with tight quality control. In order to control quality and timeliness, large rattan product (parent) firms increase inspection activities. In this case, parent firms have a strong incentive to inspect all products being ordered. These activities might increase inspection cost on the part of large firms and also increase labor used in small firms. Here there is a strong possibility that large firms transfer technology such as hand tools, design and art of furniture painting to small entrepreneurs. As a result, all activities created by subcontracting arrangements, would have an impact on household income and employment creation.

Table 6. **The Comparison of Employment Used Among Small Rattan Producers in Tegalwangi, 1992.**

| Items | Small Producers | | |
|---|---|---|---|
| | ODMO | ESCA | MDSA |
| Number of samples | 12 | 12 | 6 |
| Average workday per year | 1489 | 1664 | 1577 |
| Average output produced (pcs/year)* | 1740 | 1224 | 2566 |
| Average workday per output per year | 0.86 | 1.86 | 0.62 |

Simplified from Yeti Sumiyati (1982)
* pcs= piece as measure of output

Sumiyati (1992) conducted a survey to measure the impact of subcontract arrangements on employment. Small-scale producers are divided into three categories: (1) produced rattan output for domestic market only (ODMO), (2) output for export through subcontract arrangement (ESCA), and (3) uniting for domestic market and subcontracting (MDSA). The author simplified the result of her analysis as is presented in Table 6.

Table 6 gives some interesting results. The small producers who use subcontract arrangements (ESCA) employed more firm workers without subcontract arrangement (ODMO). Interestingly enough, however, as the figures in Table 5 show, small rattan producers mixing products for the domestic market (MDSA) and export market but using subcontract arrangements, for unclear reasons use less workdays (1577) than ODMO. The author's conjecture is that the quality of production for the domestic market might be far lower than for the export-market through subcontract arrangements. As a result, labor used for the domestic market is far below that for the export-market per unit output.

There are at least three reasons for the difference of labor used. *First*, as for the ESCA small producers categories, in order to maximize the profit, family labor might be intensified to whatever the family labor can achieve. *Second*, small producers with ESCA categories, in order to meet the exporter's orders timely enough, are likely to use more family and hired laborers. *Third*, because parent firms usually make an intensive quality control, the small producers might have been pushed to use more average workdays. As we can speculate, these quality control activities increase inspection costs due to increased labor-use on the part of large firms and also increase labor-use on the part of small firms because of a contract on quality and timely supply of rattan products generated through subcontract arrangements. Thus, the subcontracting arrangement although producing less output, generates more employment opportunities than the remaining two small-producer categories.

## 4. *The Sustainability of Subcontract Arrangements*

The major objective of this part of the paper is to examine the sustainability of subcontract arrangements among large and small rattan industries. The basic reason is that Indonesia in the post GATT and APEC situation is a new entrant in the world-market, and in keeping competitiveness for the rattan industry in the world-market, the rattan industry should be induced to use appropriate technology to improve the quality of its products in a changing world-economy. Based on the research finding outlined in the previous pages, it would be very instructive to discuss some economic motives, and the strength of small firms in the context of sustainability of subcontract arrangements.

(a) *The output demand*. This subcontracting arrangement is sustainable only if the output demand from the domestic and export-market is increased. To illustrate the point, suppose, that in the world-market the demand for rattan furniture and related products declined. Then, in this situation the demand from the export source would automatically decline. This declining demand may induce large firms to alter the subcontract arrangement by their own rattan manufactures. Therefore, in the short run the stability of output demand is the key-factor for a sustainable subcontract arrangement. In the long run, however, the

key-element for small-scale firms to survive is if they have their own domestic market-share. This implies that the small firm should not only rely on the export-market through subcontracting arrangements because instability is always built in the world-market.

(b) *Art of design*. The experience on how to form a rattan frame in which the key-factor is the art of designing rattan for furniture, for which purpose often- times the large firm does not have enough talented workers. For example, when an order comes from a large chair store from abroad, they usually bring a detailed specification of the rattan related product being ordered. Presumably, the rattan product ordered is thought to be a passion in the next season in Japan, Australia, European countries, and the United States. Soon after a contract is signed the rattan firm owner would call his regular subcontractors (in such case he usually relies on one or more fine subcontractors) to first build a prototype of the ordered product. When they perform a satisfactory design, the large firm would place an order according to the market need which is essentially based on the capacity of the small firms. It is worth noting that not all small firms are capable of developing prototypes of furniture satisfactorily. If this is the case they get no orders.

(c) *Low Cost of Production*. It is probably safe to conclude that the given quality of a product demanded would be well maintained if small firms used low cost production rather than large firms subcontracting arrangements. The key-factor for a competitive edge of small firms in low cost production is that small firms usually pay lower wages compared to large firms. This is because workers employed in large firms are usually experienced workers and of course get higher wages than in small firms. The cost of production for a similar product is less in small firms, which in fact may have effectively forced large firms to make a subcontract arrangement. If labor force is getting scarce the predictable effect is that it will encourage workers to move to higher paying jobs in the rattan industry which means moving to large scale firms[6].

Several important points worth mentioning here are: (a) they already had experience in working at rattan manufactures before setting up small-scale firms, (b) the owner of rattan manufactures provide them with the necessary raw materials such as rattan cane, and (c) they are working independently in the sense that they can also make sets of furniture for either a different company or market, but they can not copy the original design as ordered by the parent firms for a different market segment.

The major conclusion from our discussion is that in steadying the world market fluctuations, in subcontract arrangements, though it is mostly a hierarchical relationship, small firms have a certain point of strength, that is small firms are able to master rattan art design of furniture. This strength, according to our observation becomes an incentive factor for large firms to use subcontracting arrangements precisely because a small firm has competitive advantages (low cost and art of design). The sustainability of subcontract arrangements also depends on how

[6]For addition information: workers recruited in large firms and working a long time, say (5-6) years and having learned a complete task in that factory, in their mid-age (more than 30 years) tend to quit their job and set up their own small-scale firm. Very often they become subcontractors to their farmer employer (Dian, 1989).

long differential wages exist in the labor-market. When large and small firms are facing the same labor scarcity, the subcontract arrangement may disappear.

## Conclusions and Implications

Based on research findings some conclusions are made:

1. The export bans, of course, would increase the number and role of large and small-scale industries, create more employment, and generate more profit especially for large firms. In an island economy like the Indonesian, thousands of small entrepreneurs and part-time farmers collecting rattan from some parts of Kalimantan, Sulawesi and Sumatera have lost exporting enterpreneurship and of course their income.

2. The export ban and the high tariff export protection policy in itself, is viewed as part of an anti trade policy regime. The situation of post export bans and high tariff protection has created a serious problem that in Kalimantan, Sumatera and Sulawesi besides regional income loss, those entrepreneurs who used to have an institutional trade network abroad now are abandoned if not destroyed (lost in sunk cost ?). In order to preserve these big islands, the government of Indonesia should revise the rattan export policy regimes for high export tariff of raw and semi finished rattan into a very low export tariff of semi finished rattan, while a very low export ban on raw rattan be kept intact.

3. The agglomeration of rattan industries at Tegalwangi is essentially a skill-based industry which is transformed into a mixture of large and small-scale industries after the export ban. In order to maintain the competitive edge of large firms, the subcontract system is used as a means to maximize the profit or market-share by using the following strategies: (a) reducing cost strategy by using cheap labor for a high-speed production system, (b) absorbing all export orders from a highly fluctuating world-market, and (c) lessening the burden of recruiting, supervising and financing matters within the management of firms. The sustainability of subcontracting arrangements on the part of large firms (with hierarchical relationships) will largely depend on the changing of these three factors.

4. The sustainability of a subcontracting arrangement, on the small-scale firms' side is largely determined by the ability of small firms to maintain low-cost operating production and to increase its market-share (marketing) in the domestic market overtime. The problems faced by small firms are: technology (design and tools and spare parts), access to raw materials, financial sources, and management (entrepreneurship and skill) in a world of highly differentiated and competitive nature of the rattan industry. As long as small firms have a "competitive edge" (low cost and art design) they are capable of making market demanded furniture. In the situation of a constantly changing consumers' life-style, especially in an importers' country the small and cottage industries need information and learning centers to understand those changes.

5. The impact of subcontract arrangements on employment and income generation is positive. Specifically, the subcontracting arrangement has increased the capacity for producing output and at the same time for generating employment opportunities. The three-layer subcontracting system, perhaps only brings low to moderate benefits to the labor-surplus economy in the neighborhood villages of Tegalwangi.

6. Very little research and few publications have been done to understand why a concentration of one field of industrial activities for agglomeration of industry is taking place in one location. As a primary result based on our research, there are three possible explanations: (a) social and historical reasons, (b) Shmitzs' collective efficiency; alternatively, (c) building regional industrial (or local) developments based on "branch industrial competitive edge".

7. Although not discussed extensively, the increasing trend of large scale industries in Tegalwangi, as was initially thought, will completely push out small-scale and cottage-industries. But the subcontract arrangement has made it possible to link the interest of large scale industries with small and cottage industries. These subcontract linkages have a macro economic policy implication in solving a rural economic problem through rural industrialization: income and employment generation.

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